

### **ABSTRACT OF THE DISCLOSURE**

[0039] A system and method of obtaining a reconstructed digital image of an image that is projected, displayed, or printed on a surface by capturing a single digital image of the surface is described. According to the system and method, at least three illumination marks are projected onto the surface. The illumination marks have a particular detectable characteristic. An image capture device captures a *single* image of the surface including the illumination marks to obtain captured image data. The location and the pixel values corresponding to the illumination marks are detected dependent on the particular characteristic of the illumination mark pixels in the captured image data. The locations of the illumination marks are then used to correct for distortion of the image and surface in the captured image data to generate an undistorted digital image of the image on the surface. The illumination mark pixel values are replaced within undistorted digital image with estimated pixel values that are determined using neighboring non-illumination mark pixel values.